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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,146	10/22/2004	Hideki Haramoto	121571	2304
25944	7590	11/16/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER LESLIE, MICHAEL S	
			ART UNIT 3745	PAPER NUMBER

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/512,146

**Applicant(s)**

HARAMOTO ET AL.

**Examiner**

Michael Leslie

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-16, 19, 20, 24, 25 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-16, 19, 20, 24, 25 and 27-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

Applicant's arguments filed October 2, 2006, with respect to claim 14 have been fully considered but they are not persuasive. Applicant's arguments with respect to claim 19 have been considered but are moot in view of the new ground(s) of rejection. Claims 14-16, 19, 20, 24, 25, and 27-30 are pending.

With respect to claim 14, Applicant has generally argued that Fujikawa does not teach or suggest an operation device with which the travel motion control valve is operated or an over rotation prevention device that reduces a rotation rate of the travel motion motor while the operation device is being operated. This statement is not agreed with. Fujikawa discloses that the over rotation prevention device that reduces a rotation rate of the travel motion motor while the operation device is being operated (see paragraphs [0026]-[0028] of the translation supplied with the IDS dated 10/22/2004).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-16, 24, 25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al (JP 2001-304409) in view of Mechin (3864910).

Fujikawa et al discloses a travel motion control apparatus for a hydraulically driven vehicle, having a hydraulic pump (7) that is driven by a driving motor (not shown) and outputs

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hydraulic operating oil inside a tank (40), a travel motion motor (1) that is driven with pressure oil supplied from the hydraulic pump, a rotation rate detection device (2) that detects a rotation rate of the travel motion motor, and an over rotation prevention device (4, 3c, 5, 33, etc.) that reduces a rotation rate of the travel motion motor if the rotation rate detection device detects a rotation rate equal to or higher than a predetermined rotation rate upper limit while the an operation device (not shown) for controlling the circuit is being operated. Wherein the travel motion motor is a variable displacement travel motion motor, there is provided a displacement volume control device (33) that controls the displacement volume of the motor in correspondence to the travel pressure at the travel motion motor, the over rotation prevention device increases the displacement volume of the travel motion motor regardless of motor displacement volume control executed by the displacement volume control device if the rotation rate detection device detects a rotation rate equal to or higher than the rotation rate upper limit, and control for increasing the displacement volume of the travel motion motor is stopped once the rotation rate of the travel motion motor becomes equal to or less than a predetermined rotation rate lower limit which is at least lower than the rotation rate upper limit and the displacement volume of the travel motion motor is controlled by the displacement volume control device in correspondence to the traveling pressure. The travel motion control apparatus is in a hydraulically driven excavator. Fujikawa et al teaches a reversible hydraulic pump, but does not teach the use of a travel motion control valve that controls a flow rate of the pressure oil supplied from the hydraulic pump to the travel motion motor and includes a pressure oil supply port through which the pressure oil is supplied to the travel motion motor and a return port through which the pressure oil returns to the tank controlled by an operation device, or a

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counterbalance valve disposed between the travel motion motor and the travel motion control valve, which is controlled by a travel pressure output from the hydraulic pump.

Mechin discloses a travel motion control apparatus for a hydraulically driven vehicle, having a hydraulic pump (2), a travel motion motor (1) that is driven with pressure oil supplied from the hydraulic pump, a travel motion control valve (9), disposed between the hydraulic pump and travel motion motor, that controls a flow rate of the pressure oil supplied from the hydraulic pump to the travel motion motor, an operation device (not labeled) with which the travel motion control valve is operated, and an over rotation prevention device. Mechin further teaches a counterbalance valve (13) disposed between the travel motion motor and the travel motion control valve, which is controlled by a travel pressure output from the hydraulic pump.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Fujikawa et al by replacing the reversible pump of a closed loop with a travel motion control valve that controls a flow rate of the pressure oil supplied from the hydraulic pump to the travel motion motor and includes a pressure oil supply port through which the pressure oil is supplied to the travel motion motor and a return port through which the pressure oil returns to the tank controlled by an operation device of an open loop and the addition of a counterbalance valve disposed between the travel motion motor and the travel motion control valve as taught by Mechin for the purpose of controlling fluid flow between the pump and travel motion motor.

In further regard to claim 27 and 28, Fujikawa et al, as modified, does not teach a specific range of displacements relative to maximum displacement to which the motor is controlled by the over rotation device. Since applicant has not disclosed that having the over rotation

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prevention device increase the displacement to 40% to 70% of maximum displacement solves any stated problem or is for any particular purpose above the fact that this range will decrease the speed of the motor and it appears that the over rotation prevention device of Fujikawa et al, as modified, would perform equally well with the actuation range as claimed by applicant, it would have been an obvious matter of design choice to modify the system of Fujikawa et al, as modified, by utilizing the actuation range as claimed for the purpose of reducing the speed of the motor.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al (JP 2001-304409) in view of Mechin (3864910) as applied to claims 15 and 16 respectively above, and further in view of Takehisa et al (JP 01-116371).

Fujikawa et al, as modified, discloses a travel motion control apparatus for a hydraulically driven vehicle as described above, but does not teach that when rotation rate detection device detects a rotation rate equal to or higher than the rotation rate upper limit, the over rotation prevention device gradually increases the displacement volume of the travel motion motor.

Takehisa et al a system for controlling the speed change of a variable pump and variable motor system, wherein the speed change is controlled to be gradual.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Fujikawa et al, as modified, by having the over rotation prevention device gradually increases the displacement volume of the travel motion motor as taught by Takehisa et al for the purpose of avoiding jerking movements of the vehicle.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al (6339929) in view of Kazuhiro et al (JP 06-193730).

Udagawa et al discloses a motion control apparatus for a hydraulically driven vehicle having a hydraulic pump (3) that is driven by a driving motor (101), a motor (2) that is driven with pressure oil supplied from the hydraulic pump, a travel motion control valve (1) that controls a flow rate of the pressure oil supplied from the hydraulic pump to the travel motion motor, an operation device (5) with which the travel motion control valve is operated, a rotation rate detection device (11) that detects a rotation rate of the motor, a variable relief valve (9) that allows a relief pressure of the pressure oil from the travel motion motor to be altered, and an over rotation prevention device (12; column 2, lines 29-59). Udagawa et al does not teach that the over rotation prevention device increases the relief pressure at the variable relief valve if the rotation rate detection device detects a rotation rate equal to or higher than a predetermined rotation rate upper limit which is equal to or less than an allowable rotation rate limit of the travel motion motor, or that the motor is a travel motion motor.

While Udagawa et al does not teach that the over rotation prevention device increases the relief pressure at the variable relief valve if the rotation rate detection device detects a rotation rate equal to or higher than a predetermined rotation rate upper limit which is equal to or less than an allowable rotation rate limit of the travel motion motor. The over rotation prevention device of Udagawa et al, in the neutral free mode, alters the relief pressure if the rotation direction of the motor is different than the drive direction in order to prevent further rotation,

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which is corollary to the correction of a rotation rate that is different than the desired rotation rate.

Kazuhiro et al teaches a travel motion control apparatus for a hydraulically driven vehicle having a hydraulic pump (1), a travel motion motor (3) that is driven with pressure oil supplied from the hydraulic pump, a travel motion control valve (5), an operation device (7A), a rotation rate detection device (25) that detects a rotation rate of the travel motion motor, and a variable relief valve (19) that allows a relief pressure of the pressure oil from the travel motion motor to be altered.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the over rotation prevention device of Udagawa et al to device increases the relief pressure at the variable relief valve if the rotation rate detection device detects a rotation rate equal to or higher than a predetermined rotation rate upper limit which is equal to or less than an allowable rotation rate limit of the motor, and to further modify Udagawa et al by having the system apply to a travel motion motor as taught by Kazuhiro et al for the purpose of preventing undesirable motor rotation.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al (6339929) in view of Kazuhiro et al (JP 06-193730) as applied to claim 19 above, and further in view of Takehisa et al (JP 01-116371).

Udagawa et al, as modified, discloses a travel motion control apparatus for a hydraulically driven vehicle as described above, but does not teach that when rotation rate detection device detects a rotation rate equal to or higher than the rotation rate upper limit, the



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over rotation prevention device gradually increases the displacement volume of the travel motion motor.

Takehisa et al a system for controlling the speed change of a variable pump and variable motor system, wherein the speed change is controlled to be gradual.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Udagawa et al, as modified, by having the over rotation prevention device gradually increases the displacement volume of the travel motion motor as taught by Takehisa et al for the purpose of avoiding jerking movements of the vehicle.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Leslie whose telephone number is (571) 272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.

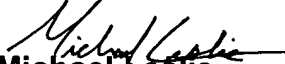
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML

November 8, 2006

  
**Michael Leslie**  
**Patent Examiner**  
**AU 3745**